REMARKS

Claims 1-11 are pending in this application. By this Amendment, claims 1-11 have been amended for clarity and to correct informalities. Accordingly, no new matter has been added.

I. Allowable Subject Matter

Applicants appreciate the indication that claims 5, 6 and 9-11 contain allowable subject matter. Claims 5, 6 and 9-11 have been amended merely to correct informalities and improve readability. The amendments have not altered the scope of the subject matter recited by these claims. Accordingly, claims 5, 6 and 9-11 continue to recite allowable subject matter. Further, Applicants submit that claims 1-4, 7 and 8 are also patentable for at least the reasons discussed herein.

II. Objection to the Drawings

The Office Action objects to the drawings for allegedly failing to depict certain elements referred to in the specification. The specification has been amended to remove the reference numerals 5 and 6. Accordingly, withdrawal of the objection is respectfully requested.

III. Objection to the Specification

The Office Action objects to the specification for allegedly failing to comply with formalities. The specification has been amended responsive to the Examiner's suggestions. Accordingly, withdrawal of the objection is respectfully requested.

IV. Claim Objections

The Office Action objects to claims 1-11 for allegedly failing to comply with various informalities. Claims 1-11 have been amended in accordance with most of the Examiner's suggestions.

Further, although claims 7 and 8 have not been amended in accordance with the Examiner's suggestion, these claims have been amended responsive to the objection. In addition, claim 11 has been amended to recite "A method ...., achieved by microelectronics techniques, the method comprising" responsive to the objection.

Accordingly, withdrawal of the objection to claims 1-11 is respectfully requested.

V. 35 U.S.C. §103 Rejection

The Office Action rejects claims 1-4, 7 and 8 under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,128,671 (hereinafter "Thomas, Jr.") in view of U.S. Patent No. 6,230,564 (hereinafter "Matsunaga"). This rejection is respectfully traversed.

Thomas Jr. and Matsunaga, either alone or in combination, fail to disclose, teach or suggest a deformable element that is in equilibrium around a central part of the deformable element, as recited by claim 1. Further, the combination of Thomas Jr. and Matsunaga fails to disclose, teach or suggest a sensor having four conducting areas or a sensor capable a rotation and a translation of a movement detector, as recited by claim 1.

Thomas Jr. discloses a movement detector with several degrees of freedom. The movement detector includes two sets of three accelerometers (11, 12, 13 forming one set of accelerometers and 14, 15, 16 forming the other set). The three accelerometers in a set are arranged along three mutually perpendicular axes such that each accelerometer is responsive to a single acceleration along the particular axis on which it is arranged and generates an electrical signal indicating the acceleration. (See col. 2, lines 11-23 and Figs. 1a-1c). An enclosure 10 supports the two sets of mutually perpendicular accelerometers.

The Office Action alleges that the cantilevered member 21 corresponds to the deformable element of claim 1. However, the member 21 is not in equilibrium around a central part. As clearly shown in Fig. 1c, the member 21 is attached at one end, thereby

forming a cantilevered structure (see also col. 2, lines 35-40). Thus, Thomas Jr. fails to disclose a deformable element in equilibrium around a central part of the deformable element.

Further, Thomas Jr. discloses that each pair of accelerometers that are arranged along a particular axis (e.g. accelerometers 11 and 14 are both arranged along the X-axis) generate signals of equal magnitude and sign when the housing 10 is moved linearly along that axis (e.g. X-axis). Further, no other accelerometers besides accelerometers 11 and 14 generate any signals when the housing 10 moves linearly in the X-direction. (See col. 3, lines 3-9).

Thomas Jr. further discloses that rotation about one of the axes causes the pairs of accelerometers to generate unequal signals that may have opposite signs. For example, Thomas Jr. discloses that if rotation about the Z-axis is initiated, the accelerometers 11 and 14 generate unequal signals and the accelerometers 12 and 15 also generate signals due to centrifugal forces. Thomas Jr. discloses that the combination of these signals determines a type of motion applied by a user to the housing 10. (See col. 10, lines 10-25).

Thus, Thomas Jr. clearly requires a combination of signals from several accelerometers to determine rotational movement about a single axis. Thus, Thomas Jr. fails to disclose a single sensor capable of detecting translational and rotational motion, as recited by claim 1. Further, Thomas Jr. fails to disclose, teach or suggest a "deformable element responds to a rotation around a predetermined axis by pivoting, causing the ends of the deformable element to substantially simultaneously and temporarily contact two conducting areas arranged on opposing inside walls," (emphasis added) as recited by claim 1.

The Office Action further alleges that Matsunaga discloses four conducting areas and a sensor that responds to translation and rotation, as recited by claim 1. Applicants respectfully disagree.

Matsunaga discloses an acceleration sensor including a central board 1 and two outside boards 2a and 2b. The central board 1 includes a central contact section 11, a weight

12, and a central terminal section 13. The outside boards 2a and 2b include outside contact sections 21a and 21b, weight confronting sections 22a and 22b, and outside terminal sections 23a and 23b, respectively. Because the central board 1 and the outside boards 2a and 2b are made of a conductive material, the central contact section 11 and the outside contact section 21 are connected to the central terminal section 13 and the outside terminal section 23, respectively. (See col. 2, line 63 - col. 3, line 12).

Matsunaga discloses that when acceleration applied to the semiconductor acceleration sensor is greater than a predetermined value, the central contact section 11 and the weight 12 move such that the central contact section 11 is brought into contact with the outside contact section 21. The weight 12 comes into contact with a stopper (24a or 24b) such that the weight 12 is spaced a predetermined distance from a weight confronting section (22a or 22b). Matsunaga discloses that the function of the stopper 24a or 24b is to dampen the effect of the acceleration and to prolong conduction time. (See col. 3, lines 37-65). Thus, the stoppers 24a and 24b are not themselves conducting areas. Thus, Matsunaga only discloses one outside contact section provided on each outside board (i.e. 21a is provided on 2a and 21b is provided on 2b). Thus, Matsunaga fails to disclose, teach or suggest "four conducting areas arranged such that two of the conducting areas are arranged on one of the inside walls and two of the conducting areas are arranged on the opposing inside wall," (emphasis added) as recited by claim 1.

Further, Matsunaga fails to disclose a deformable element that is in equilibrium around a central part of the deformable element. As clearly shown in Figs. 1-3c of Matsunaga, the central board 1 is not in equilibrium around a central part.

Further, Matsunaga fails to disclose a sensor that detects both translational and rotational acceleration. The semiconductor acceleration sensor of Matsunaga only detects acceleration due to a translation along an axis (See Figs. 3d and 4).

Therefore, Thomas Jr. and Matsunaga, either alone or in combination, fail to disclose, teach or suggest each and every feature of claim 1. Therefore, claim 1 is patentable and 2-4, 7 and 8 are also patentable for at least their dependency from claim 1 as well as for the additional features they recite.

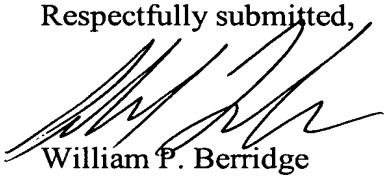
Accordingly, withdrawal of the rejection is respectfully requested.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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